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Analyzing the function of facilitation using a state model of communication and a cognitive model of facilitator

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Abstract

Nowadays, facilitators often can be seen in risk communication. And the ability of facilitators highly affects whether risk communication succeeds or not. Many previous studies summarized requirements for facilitators in the risk communication. However, these requirements are based on empirical rules of facilitators and qualitative analysis. Therefore, other people cannot follow and reuse the knowledge of the facilitators. To solve these problems, this study set an objective as clarifying functions of competent facilitators with both quantitative and qualitative analysis. The functions mean how facilitators recognize a situation of risk communication, how facilitators select ways to intervene communications and how the situation change is changed by the intervention. In this presentation, we propose an idea of this study.

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Keywords: Facilitation; Risk communication; State model of communication; Cognitive model of facilitator

1. Introduction

There are various risks in the world. Against these risks people decide the way of risk management. In this decision process, the formation of social agreement of stakeholders is often necessary. As one way of making the formation, risk communication is important[1].

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According to Tsuchida[2], when the beginning of doing risk communication, the purpose of risk communication is providing information correctly. However, nowadays, other type of risk communication often can be seen and its importance is recognized in various fields. This risk communication aims that experts share the expert knowledge, expert thinking and criteria of judgement with citizens and citizens share their sense of values and their criteria of judgement. Therefore, this risk communication is called as “two-way risk communication”

In doing the two-way risk communication, facilitators are often set. And the ability of facilitation often affects whether the two-way risk communication succeeds or not. For example, Yagi[3] points out the role of facilitator is necessary in achieving a nuclear two-way risk communication. And Yagi also summarizes the necessary conditions of facilitator in the nuclear two-way risk communication. And IRGC[1] also summarizes the necessary conditions of facilitator. This is not only for the nuclear field but also for the science and technological field. In addition to these previous research, there are many books about facilitation. For example, Fran Rees[4] writes the facilitation manuals in his book.

However, only a few competent facilitators succeeded two-way risk communication. Because, the other people cannot trace the facilitation of the competent ones, even though some competent facilitators write the way of good facilitation like mention above. Then, why people cannot trace the way of good facilitation?

In this paper, first, we analyse the reason why people cannot trace the previous facilitation manuals. And second, we set the problems to solve in this research and objective of this research. And third we propose the idea to solve the problems.

2. Problems of the previous facilitation manuals

There are many research and books which summarize the the necessary conditions of facilitator. In this paper, these research and books is called as the previous facilitation manuals. To analyze the problems of the previous facilitation manuals, we compare the previous facilitation manuals and manuals used in other fields. There are many studies about making manuals. And these studies can be categorized into 4 types. Fig.1 shows these 4 types.

The vertical axis shows whether the subject of manual is routine work or non-routine work. The cross axis shows whether the mistakes of the subject lead big danger or small danger.

Studies in the area (A), (B) and (D) have a common characteristic that these studies focus on the PDCA cycle. However, due to the area, the studies focus different steps of PDCA cycle (Plan, Do, Check and Act).

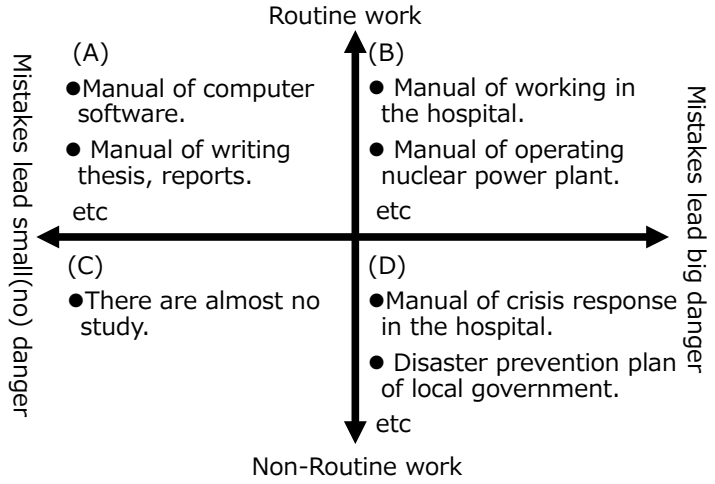

Fig.1 Four types of the studies about manuals.

In the area (A) which means “routine work” and “small danger”, for example, the studies about manual of computer software or Manual of writing thesis, reports can be seen. In this area, the studies about the manuals focus on how to correspond problems which happen actually. Because, if problems happen, it would not lead so critical accidents. Therefore it can be said that the Act step is especially focused on.

In the area (B) which means “routine work” and “big danger”, for example, the studies about manual of working in the hospital or manual of operating nuclear power plant. In this area, the accidents can’t be allowed. And so, the studies focus on how to make the better manuals. To do this, the studies often adopt the studies in the field of human-factor and cognitive engineering. And the studies also focus on how to make the better training plans and measure it. The better training plans can lead to improve the manuals. Therefore it can be said that all the steps of PDCA cycle is important.

In the area (C), which means “non-routine work” and “small danger”, there is almost no study.

In the area (D) which means “non-routine work” and “big danger”, for example, the studies about manual of crisis response in the hospital or disaster prevention plan of local government. The characteristics of the studies in this area are almost similar to the studies in the area (B). The studies focus on how to make the better manuals and how to make the better training plans. However, one point is different from the studies in the area (B). That is, in the area (D), many accidents beyond expectations happen. And so, the studies in the area (D) focus on the cognitive aspects more than the studies in the area (B). Therefore it can be said that all the steps of PDCA cycle is important.

Then, to which area the previous facilitation manuals belong? This is the difficult problem. Because facilitation is routine work for facilitators, however, facilitation is non-routine work in the meaning that facilitator face different situation one by one. On the other hand, it can be said that mistakes of facilitation would not lead big danger usually. Therefore, first, we compared the previous facilitation manuals with the studies in the area (A). Then, about problems which happen only in non-routine work, we compared the previous facilitation manuals with the studies in the area (D).

Many of the studies in the area (A) shows similar necessary conditions which should be included in manuals. In this paper, the necessary conditions of ISO9000[5] is used as the representation of studies in the area (A). The necessary conditions of manuals in ISO9000 are shown in Table 1. As Table 1 shows, there are 6 necessary conditions which should be included in manuals in the area (A); Purpose, Responsibility, Related instructions, Procedure, Verification and Records. And Table 1 also shows whether the previous facilitation manuals meet the necessary conditions of manuals in the area (A) or not.

Table 1. The necessary conditions of manuals in the area (A) and comparison with the previous facilitation manuals.

Necessary condition	Explanation	Whether the previous facilitation manuals meet the conditions
Purpose	Purpose of working/doing with manuals. Scope which the manual cover	△: There are various objectives of facilitation. However, the previous manuals do not separate these various cases clearly.
Responsibility	Responsibility of working/doing.	○: Facilitator is a Responsibility.
Related instructions	Reference. Bases of manuals.	×: There is no description of related instructions.
Procedure	Steps of working/doing. Procedure to achieve each steps.	△: The manuals do not clarify the different processes to achieve the different objectives.
Verification	Methods of checking procedure and manuals.	×: There is no description of related instructions
Records	Records which should be kept. Responsibility of records.	×: There is no description of related instructions

As Table 1 shows, the previous facilitation manuals do not meet many of the necessary conditions. However, we can summarize these problems into two problems. The problem of “Purpose” and “Procedure” is that the previous facilitation manuals can/do not divide the facilitation into steps. Manuals should divide the facilitation with its objective and facilitation in each objectives should divide into more small processes. The problem of “Related instructions”, “Verification” and “Records” have a cognitive aspect. The previous facilitation manuals can’t describe “Related instructions” because the manuals are based on empirical rules of facilitators. And the previous facilitation manuals can’t describe “Verification” because facilitator improve their facilitation with their own thinking and the

way of their thinking is not clarified. Furthermore, the previous facilitation manuals can't describe "Records" because it is unclear that which records are used to improve the facilitation. This is the same problem of "Verification". And this cognitive aspect problem is related to the studies in the area (D). Like area (D), facilitation face many accidents beyond expectations. And the studies in the area (D) solve the cognitive aspect problem with cognitive engineering.

3. Objectives of this study

As the analysis in the chapter 2 shows, the previous facilitation manuals have mainly two problems.

One is that there is no method to divide the facilitation into some steps with its objectives and also divide the each steps into more small processes. This problem cause the lack of the previous facilitation manuals which Table 1 shows. Furthermore this is one reason why many people can't follow and reuse the knowledge of the facilitators.

Another problem is that the previous facilitation manuals do not clarify cognition of facilitators. This problem cause that the previous facilitation manuals can't describe the bases of the manuals and lack the "Check" and "Act" functions in PDCA cycle.

Therefore, against these two problems, we set following objectives.

- To clarify the purposes and processes of facilitation, we will make a state model of communication. The state model of communication shows the changing flow of the objective and processes of risk communication.
- To clarify the cognition of facilitator, we will make a cognitive model of facilitator. The cognitive model of facilitator shows how facilitators recognize a situation in risk communication and what kind of intention is included in their facilitation. In addition to this, we will also clarify how facilitators check their mistakes in facilitations and how they improve their facilitations.
- By clarifying the relation between the state model of communication and the cognitive model of facilitator, it also be clarified that how the situation is changed by the facilitation.

And this study will change the present situation that the ability of facilitators affect whether risk communication succeeds or not. With the more people the risk communication succeeds, the more risk problems will be solved.

From the next chapter, we propose an idea of the two models.

4. An idea of studying method

To achieve these objectives, this study proposes two models, the state model of communication and the cognitive model of facilitator. Fig.2 shows the image of the relation between the state model of communication and the cognitive model of facilitation. There is one state of communication called A. Somehow Facilitators recognize the state A. The way of cognition is shown in the cognitive model of facilitation. After facilitator's thinking, they choose the facilitation method. And the method affects to the state A. And of course, the other communication also affects the state A. Then the state of communication change A from B.

One objective of this study is to analyse the relation between the two models. To do this, the state model of communication should be made with quantitative analysis. Because, the cognitive model of facilitator is made with qualitative analysis which is focus on the cognition of facilitator.

4.1. The state model of communication

The state model of communication consists of elements which can be observed objectively, such as who is talking, tones of conversation, interval time of conversation and so on. Voice data of conversation gives the parameters of these elements. Transitions of the parameters are shown in this model. From these quantitative data, this model shows the flow of changing the communication state. And from the relation between the two models, it is cleared that what purpose each steps have.

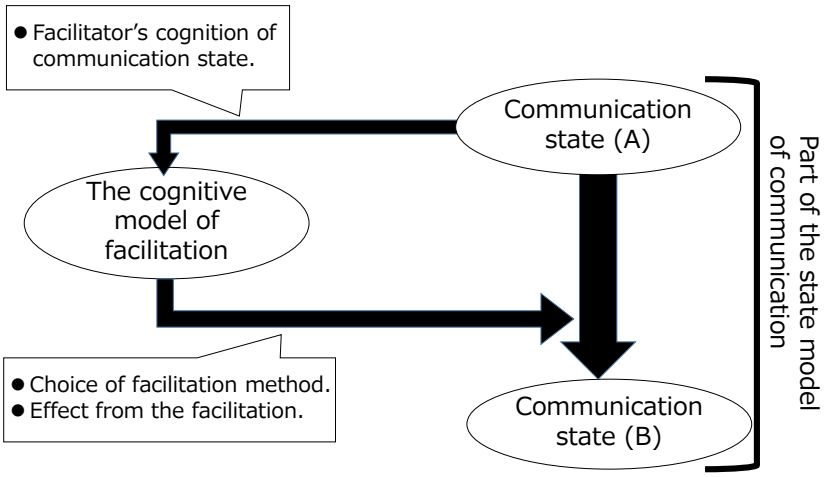

Fig. 2. Four types of the studies about manuals.

4.2. The cognitive model of facilitation

The cognitive model of facilitator is based on facilitator's subjective cognition. Fig.3 shows the image of the cognitive model of facilitation.

This model shows what the facilitators focus on in observing communication, what are criteria for judging the situation and which way to intervene communications they choose. This cognition data is given by doing interview to facilitators.

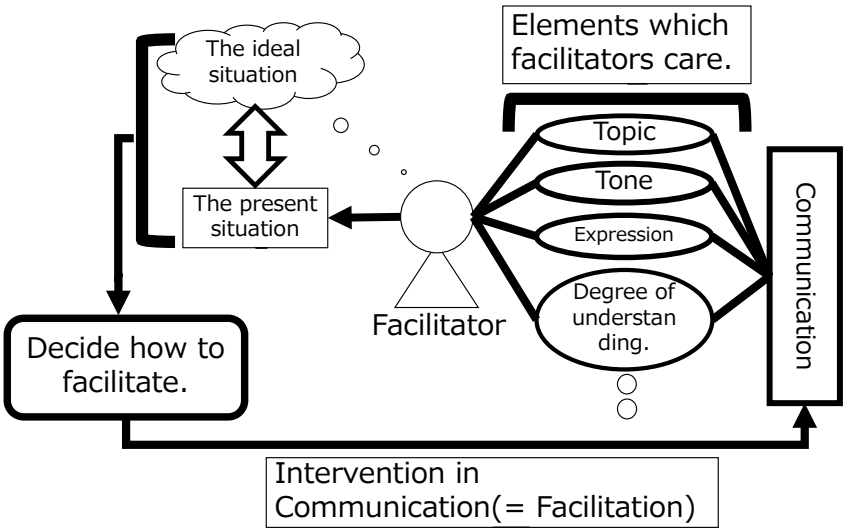

Fig. 3. The cognitive model of facilitation.

When constructing the cognitive model of facilitator, there is a difficulty of model to include the time change, because it is difficult to grasp subjective cognition minutely. Therefore, this study divides the risk communication into some steps with the state model of communication. And the ideal result is that the cognitive model of facilitator has little change within each step.

4.3. Check and act process of the manuals

The cognitive model of facilitation can't solve one of the problems which are shown in chapter 2. The one problem is that the previous facilitation studies lack the "Check" and "Act" functions in PDCA cycle. Therefore, we should also clarify how facilitators check their mistakes in facilitations and how they improve their facilitations. In many other field, mistakes can be found easily, because the mistakes cause some accidents. However, the mistakes of facilitation often do not cause accidents. And so, it should be clarified when facilitators find their own mistakes and why they find their mistakes. To get the data of these cognition of facilitator, we will interview facilitators.

5. Conclusion

In this paper, first, we analyze the previous facilitation manuals by comparing with the other studies about manuals. As the result, there are mainly two problems. One problem is that the previous facilitation manuals do not have any methods to divide the facilitation into some steps with its objectives and also divide the each steps into more small processes. Another problem is that the previous facilitation manuals do not clarify cognition of facilitators. These problems are the reason why many people can't follow and reuse the knowledge of the facilitators.

To solve these problems, this research set the objective as clarifying the purposes and processes of facilitation and clarifying the cognition of facilitator. To do this, this paper proposes the idea of two models. The state model of communication shows the changing flow of the objective and processes of risk communication. And the cognitive model of facilitator shows how facilitators recognize a situation in risk communication and what kind of intention is included in their facilitation. The relation between the two models shows how the situation is changed by the facilitation. In addition to this, this research aim to clarify the other aspect of facilitator's cognition. That is how facilitators check their mistakes in facilitations and how they improve their facilitations. Because, the previous facilitation manuals lack the "Check" and "Act" functions in PDCA cycle.

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